EFFECTIVENESS OF MULTIMEDIA EDUCATIONAL PACKAGE ON KNOWLEDGE AND ATTITUDE REGARDING INFERTILITY AMONG COUPLES AT SELECTED VILLAGES, THIRUVALLUR DISTRICT, 2011.

DISSERTATION SUBMITTED TO

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI.

IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2012

EFFECTIVENESS OF MULTIMEDIA EDUCATIONAL PACKAGE ON KNOWLEDGE AND ATTITUDE REGARDING INFERTILITY AMONG COUPLES AT SELECTED VILLAGES, THIRUVALLUR DISTRICT, 2011

Certified that this is the bonafide work of

Ms. SUPRABHA.V.R

OMAYAL ACHI COLLEGE OF NURSING,
#45, AMBATTUR ROAD,
PUZHAL, CHENNAI – 600 066.

COLLEGE SEAL

SIGNATURE: _____

Dr.(Mrs).S.KANCHANA
B.Sc.(N)., R.N., R.M., M.Sc.(N)., Ph.D.,
Principal & Research Director,
Omayal Achi College of Nursing,
Puzhal, Chennai – 600 066, Tamil Nadu

Dissertation Submitted to

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI.

In partial fulfilment of requirement for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2012

EFFECTIVENESS OF MULTIMEDIA EDUCATIONAL PACKAGE ON KNOWLEDGE AND ATTITUDE REGARDING INFERTILITY AMONG COUPLES AT SELECTED VILLAGES, THIRUVALLUR DISTRICT, 2011.

Approved by Research Committee in December 2010.

PROFESSOR IN NURSING RESEARCH

Dr.(Mrs).S.KANCHANA _____
B.Sc.(N)., R.N., R.M., M.Sc.(N)., Ph.D.,
Principal & Research Director,
Omayal Achi College of Nursing,
Puzhal, Chennai – 600 066, Tamil Nadu.

CLINICAL SPECIALITY - HOD

Mrs.S.BHAGAVATHY _____
B.Sc. (N)., R.N., R.M., M.Sc.(N).,
Obstetrics and Gynecological Nursing,
Omayal Achi College of Nursing.
Puzhal, Chennai – 600 066, Tamil Nadu.

CLINICAL SPECIALITY – RESEARCH GUIDE

Mrs.S.BHAGAVATHY _____
B.Sc. (N)., R.N., R.M., M.Sc.(N).,
Head of the Department,
Obstetrics and Gynecological Nursing,
Omayal Achi College of Nursing.
Puzhal, Chennai – 600 066, Tamil Nadu.

MEDICAL EXPERT

Dr.(Mrs).SANDY JAISON, _____
M.B.B.S, M.D., DNB (O& G).,
Medical Officer,
Department of Obstetrics and Gynaecology,
Sir Ivan Stedeford Hospital,
Ambattur, Chennai – 600 053.

Dissertation Submitted to

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI

In partial fulfilment of requirement for the degree of

MASTER OF SCIENCE IN NURSING

APRIL 2012

ACKNOWLEDGEMENT

I thank God almighty for the abundant blessings throughout my career and personal life.

At the outset, I the investigator of the study, express my heartfelt thanks and gratitude to the honourable **Managing Trustee**, Omayal Achi College of Nursing for giving me a chance to undergo the Post graduate programme in this esteemed institution for the fulfilment of my professional career.

I express my sincere thanks to **Dr.Rajanarayanan,** B.Sc., M.B.B.S., FRSH [London], Research Co-ordinator ICCR and Honorary Professor in Community Medicine for the valuable suggestion and guidance throughout the study.

I am extremely grateful to **Dr.(Mrs.).S.Kanchana,** Principal, Omayal Achi College of Nursing, for her constant source of inspiration, guidance and encouragement throughout the study.

I express my humble gratitude to **Prof.(Mrs.)D.Celina,** Vice Principal, Omayal Achi College of Nursing, for her valuable guidance and support during the study.

I express my sincere gratitude to the **Executive Members** of Research Committee ICCR for providing valuable suggestions to give shape to the study.

My grateful endless thanks to **Mrs.S.Bhagavathy,** Head of the Department of Obstetrics and Gynecological Nursing, for her timely corrections, support and motivation till the final fraction of the study.

A bouquet of thanks to **Mrs.Amutha,** Lecturer of Obstetrics and Gynecological Nursing Department for her constant source of inspiration, guidance and encouragement throughout the study.

My immense thanks to **Mrs.Dyana** and **Mrs.Beaula Jeyaselvi,** Lecturers, in Obstetrics and Gynecological Nursing Department for their guidance, suggestions and encouragement throughout the study.

I wish to express my sincere thanks to our class Co-ordinator **Mrs. Manonmani** and all experts in the field who have given their valuable suggestions.

Iam immensely thankful to the **Village President**, Morai Panchayat for granting me the permission to conduct the study.

I extend my grateful thanks to all the **Medical and Nursing Experts** in the field of obstetrics and gynecology who gave their valuable guidance and suggestions in validating the tool for the study.

I extend my warmest thanks to **Biostatistician** for his help in statistical analysis of the study.

A sincere word of appreciation and gratitude for the co-operation extended by the **Couples** who participated in my study during data collection.

I am indeed thankful to the **Librarians** of Omayal Achi College of Nursing and The Tamil Nadu Dr.M.G.R.Medical University, for their co-operation extended in procuring the literature related to the study.

I express my sincere gratitude to **Ms. Santhi,** M.A., B.Ed., for editing this manuscript and tool in English.

I express my sincere gratitude to **Ms. Meenal,** M.A., B.Ed., for editing this manuscript and tool in Tamil.

I am extremely grateful to **Mr.G.K.Venkataraman** of Elite Computers for his extreme patience and co-operation in completing the manuscript.

I am immensely grateful to my colleagues **Ms.Mini Abraham**, **Ms.Sheebha Suvitha, Ms.Vijayalakshmi** for their timely help and support throughout my study.

I thank my peer evaluator **Ms. S. Bhuvaneswari** for her timely and appropriate corrections and suggestions.

I express my heartfelt thanks to my beloved husband **Mr.S.V.Padmakumar**, my parents **Mr.V.Vijayakumar** & **Mrs.V.Ragini**, my in-laws **Mr.K.Sathasivam** & **Mrs. B.S.Vijayalakshmi**, and my dear son **Sidharth.P.S** for their unconditional love, special prayers, support and strength to make my study success.

I extend my thanks and gratitude to **Mr.Suresh Babu,** for the technical support.

A special bouquet of thanks and a memorable gratitude to my lovable **Charismians** for their valuable help and thoughtfulness.

Above all, I thank **God Almighty** for being with me in all my endeavours.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

A pre experimental study to assess the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples at selected villages, Thiruvallur District, 2011.

INTRODUCTION

Pregnancy and childbirth is a great event in the life of every human. In the Indian context childbirth is considered the most important and sacred function in the institution of marriage. Most of the reproductive health problems occur due to the lack of knowledge of young couples regarding fertility. Today childlessness has become an important public health concern. Globally 50-80 million couples were affected by infertility which have a serious social, economic and public health implications. Government and public health officials should be made aware of the impact of poor knowledge and limited awareness on fertility and infertility services and should develop communication and behavior change programmes to the couples with infertility to create awareness and improve their treatment seeking behavior.

Objective

To assess the effectiveness of multimedia educational package on knowledge and attitude of couples regarding infertility.

METHODOLOGY

Research Design

One group pre test - post test within subjects design.

Setting

The study was conducted in the following villages namely, Kanniyamman Nagar, Veerapuram, Arakkampakkam, Bangarapettai, Kadhavur and Melpakkam, Thiruvallur District.

Samples

30 couples who fulfilled the sample selection criteria formed the samples for the study.

Intervention

Administration of multimedia educational package to the couples regarding infertility using the compact disc which includes images and video clippings on general information on fertility, causes, diagnostic evaluation and treatment for infertility and the lifestyle modifications to be followed by the couples to enhance fertility.

Measurements and Tool

The level of knowledge of couples was assessed by using structured interview schedule and attitude by using modified 4 point Likert scale. Descriptive and inferential statistics were used to analyze the data.

RESULTS

The present study aimed to assess the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples at selected villages, Thiruvallur District. The findings revealed that the overall mean improvement of knowledge of husbands with a calculated ‘t’ value of 12.698 and wives with a calculated ‘t’ value of 12.396 which showed high statistical significance at $p<0.001$. The analysis showed that the overall mean improvement of attitude of husbands with a calculated ‘t’

value of 12.188 and wives with a calculated ‘t’ value of 15.821 which showed high statistical significance at $p<0.001$.

DISCUSSION

The study concluded that there was a significant improvement of knowledge and attitude of couples in post test after administration of multimedia educational package. The multimedia educational package was an effective education tool to improve the knowledge and attitude of couples regarding infertility.

Implications

The midwives have a vital role in creating awareness among young couples to build their knowledge, understanding, informed decision-making and self-responsibility in relation to their fertility potentials. The study has drawn various implications, the most important was being that the nurse midwives should plan regular and periodic health education sessions for infertile couples in hospitals and community health centres, implement mass educational programme on fertility awareness and conduct in-service program and continuing education programme on utilization of infertility services.

LESSON PLAN ON INFERTILITY

Topic	:	Infertility
Group	:	Infertile couples
Place	:	Selected villages
Duration	:	25-30 minutes
Teaching method	:	Lecture cum discussion and video show
Instructor	:	Investigator
Instructional Aid	:	Multimedia Educational Package
GENERAL OBJECTIVES	:	At the end of the multimedia educational package administration the couples will be able to gain adequate knowledge and favorable attitude regarding infertility.
SPECIFIC OBJECTIVES	:	At the end of the multimedia educational package the couples will be able to

1. tell the meaning of fertilization and infertility
2. discuss the causes for infertility
3. enumerate the investigations for infertility
4. brief the treatment options for infertility
5. describe about surrogacy
6. list the steps in adoption
7. mention the lifestyle modification for infertile couple.

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		Introduction: Pregnancy and childbirth is the greatest event in life of every human being. At the same time, infertility is a serious medical concern that affects quality of life and is a problem for 10-15% of reproductive age couples.		
1.	tell the meaning of fertilization	**FERTILIZATION:** Fertilization is a process in which there is a union of sperm with ovum at ampullary part of tube. Fertilization is most likely to occur if intercourse takes place around the time of ovulation, within 48hrs prior to or 24hrs following ovulation or every 36-48hrs while the woman is ovulating. 12-16 days prior to menstruation is considered to be the ovulation period in a woman's reproductive cycle.	Lecture with video show	Listening
2.	tell the meaning of infertility	**DEFINITION** Infertility is defined as the failure to conceive within one or more years of regular unprotected coitus. • Primary infertility denotes those patients who have never conceived after 1year of unprotected sexual life. • Secondary infertility indicates previous pregnancy but failure to conceive subsequently.	Lecture with video show	Listening

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
3.	discuss the causes for infertility	**CAUSES** Conception depends on the fertility potential of both the male and female partner. The male is directly responsible in about 30-40%, the female is about 40-55% and both are responsible for 10% cases. The remaining 10% is unexplained. **I. FACTORS IN MALE:** • Abnormalities of the sperm: The average number of sperm released at ejaculation is 35-200million. 20million/ml is considered the minimum number adequate for unassisted fertilization. Factors which can impair the functions of sperm are ▪ Abnormal hormonal stimulation ▪ Acute or chronic illness such as mumps, cirrhosis or renal failure ▪ Infectious genital tract ▪ Anatomic abnormalities such as varicocele ▪ Exposure to toxins such as lead, pesticides ▪ Antihypertensives, antineoplastic drugs ▪ Excessive alcohol intake	Lecture with video show	Listening

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		▪ Use of illicit drugs ▪ Elevated scrotal temperature resulting from febrile illness, use of hot tubs or prolonged sitting ▪ Immunologic factors produced by man against his own sperm or by the woman • Abnormal erections • Abnormal ejaculation • Abnormalities of seminal fluid **II.FACTORS IN FEMALE:** ➢ Disorders of ovulation The common factors for these are • Cranial tumors • Stress, tension, fear and anxiety • Obesity • Anorexia • Systemic disease • Poly cystic ovarian disease ➢ Abnormalities of fallopian tube like tubal obstruction, abnormal action of cilia within the tube prevents normal transport of ovum.		

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		➢ Abnormalities of the cervix ➢ Uterine problems like fibroid uterus, endometritis etc. ➢ Hormonal problems **III.COMBINED FACTORS:** ▪ Coital difficulties(obesity, limited knowledge about coital technique, inadequate privacy) ▪ Sperm antibodies ▪ Age(as age increases the quality of sperm and number of ovum decreases)		
4.	enumerate the investigations for infertility	**INVESTIGATION** **MALE** ➢ History - Age, duration of marriage, general medical history along with STDs, surgery on the testes, occupational history(excessive heat or radiation), sexual history, smoking and alcohol intake. ➢ Physical examination ➢ Routine investigation(including urine and blood) ➢ Seminal fluid analysis The collection is done by masturbation. The semen is collected in a clean wide mouthed sterile container. The sample should be sent to the	Lecture with video show	Listening

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		laboratory as early as possible so the examination should be done within 2 hours. The coitus should be avoided 2-3days prior to the test. ➢ Hormonal tests ➢ Testicular biopsy ➢ Transrectal ultrasound ➢ Vasogram ➢ Karyotype analysis ➢ Immunological tests **FEMALE** ▪ History-Age, duration of marriage, general medical history related to STDs, tuberculosis, pelvic inflammation, hypertension, abdominal or pelvic surgery, menstrual abnormality, contraceptive practice, sexual problems. ▪ Physical examination ▪ Other investigations o Evaluation of hormonal levels o Monitoring of basal body temperature-body temperature should increase by 0.4-0.8^{0}F when progesterone are highest just after ovulation.		

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		○ Postcoital testing- ▪ The woman should have intercourse 6-8 hrs before her scheduled appointment and to avoid showering and douching between having sexual relations and arriving for the test. The clinician removes and microscopically examines the woman's cervical mucus to determine its quality and character as well as the number and motility of sperm. ▪ Endometrial biopsy ▪ Cervical mucous study- ▪ Just before and for 2-3days after ovulation, the cervical mucus is thin, slippery and clear and is similar to raw egg white. ▪ Hormone estimation ▪ Ultrasonography		
5.	brief the treatment options for infertility	**TREATMENT FOR INFERTILITY** **MALE:** ▪ Hormonal treatment ▪ Surgical treatment:		

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		o Vasovasectomy o Orchidopexy in undescended testes **FEMALES:** ▪ Antibiotics and anti inflammatory drugs in Pelvic Inflammatory Disease, Tuberculosis and Sexually Transmitted Diseases. ▪ Ovulation inducing drugs ▪ Surgical treatment like laparoscopic ovarian drilling or laser vapourization-done in poly cystic ovarian syndrome etc. **ARTIFICIAL INSEMINATION:** **Intrauterine insemination:** The technique of IUI may use either the partner's sperm or that of a donor sperm.IUI is a variation that allows the sperm to bypass cervical mucus and reduces immunological incompatabilities by injecting prepared sperm directly into the uterus. **ASSISTED REPRODUCTIVE TECHNOLOGY:** INVITRO FERTILIZATION: The technique involves bypassing blocked or absent fallopian tubes. The	Lecture with video show	Listening

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		physician removes the ova by ultrasound guided transvaginal retrieval or occasionally laparoscopy and mixes them with prepared sperm from the woman's partner or donor. Fertilized ova are returned to the uterus 1-2 days after conception. Supplemental progesterone is given to the woman to promote implantation and support the early pregnancy. GAMETE INTRA FALLOPIAN TRANSFER: The woman must have atleast one patent fallopian tube for GIFT to be an option. The procedure begins in a manner similar to that of IVF, with retrieval of multiple ova and washed sperm. The retrieved ova are drawn into a catheter that also carries prepared sperm. Sperm and upto two ova per tube are injected into each fallopian tube through a laparoscope. Additional prepared sperm may be injected into the uterus through the cervix to improve the chance of successful fertilization. ZYGOTE INTRA FALLOPIAN TRANSFER: ZIFT is a hybrid of IVF and GIFT. The woman's ova are fertilized outside her body as in IVF, but the resulting fertilized ova are placed in the distal fallopian tube and enter the uterus naturally for implantation. The woman should have atleast one patent fallopian tube.		

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		INTRA CYTOPLASMIC SPERM INJECTION: Intracytoplasmic sperm injection is a method in which a single prepared sperm is injected into an ovum. Several ova are injected and then incubated for 48-72hrs.Fertilized ova are returned to the uterus as in IVF or sometimes returned to the fallopian tube. Excess fertilized ova are often frozen for future transfers or may be donated to another infertile couple.		
6.	describe about surrogacy	**SURROGATE OR GESTATIONAL CARRIERS:** Some woman cannot carry a pregnancy to term because of an absent or malformed uterus. In such cases, the client may choose to employ a surrogate to produce a baby genetically related to the mother, father or both. In this case, a procedure similar to IVF is performed, and then the resultant embryos are placed in the surrogate's uterus. After the child's birth, the surrogate surrenders him or her to the party/parties who legally adopt the child.	Lecture with video show	Listening
7.	list the steps in adoption	**ADOPTION:** Adoption can be defined as the statutory process of terminating a child's legal rights and duties towards the natural parents and substituting similar rights and duties towards adoptive parents.		

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		Age requirements: Prospective adoptive parents can't be less than 30 or more than 55 yrs of age. Single parents up to the age of 45 can adopt. Prospective adoptive parents should be at least 21yrs older than the child. The primary 6 steps in adoption are 1. Choose an adoption service provider 2. Apply to be found eligible to adopt 3. Be matched with a child 4. Apply for the child to be found eligible for adoption 5. Adopt the child in India 6. Bring your child home	Lecture with video show	Listening
8.	mention the lifestyle modification for infertile couple	**LIFESTYLE MODIFICATION FOR INFERTILE COUPLE** ❖ Reduce stress, particularly stress related to the issue of becoming pregnant ❖ Avoid use of douches and lubricants before, during and after intercourse. These can interfere with sperm motility and alter the chemical balance of cervical mucus. ❖ After engaging in intercourse, the woman trying to become pregnant should remain flat in bed. This position can help sperm flow more steadily to the cervix. The woman should not rise from this position for 20-30mts. ❖ The best timing for coitus is every 36-48hrs while the woman is ovulating.	Lecture with video show	Listening

S.No	Contributory Objectives	Content	Investigator Activity	Learning Activity
		❖ Maintain good nutrition. Encourage to take folic acid and vegetable protein more in diet. ❖ Get regular exercise to reduce stress. ❖ Aviod tobacco, smoking and recreational drugs. ❖ Reduce the duration of cell phone use**(**semen quality – sperm count, viability, motility and normal morphology)decreases as the duration of cell phone use increases. ❖ Men should avoid the hot environment and wearing tight undergarments.		
		Conclusion: Knowledge imparted to the couples with infertility helps to reduce fear and anxiety related to their fertility potentials and improve the treatment seeking behavior which assist the couples in achieving the goal of being a parent.		

CHAPTER – I

INTRODUCTION

BACKGROUND OF THE STUDY

"A baby is like the beginning of all things -Wonder, Hope and a Dream of possibilities"

The desire to give birth, to nurture an infant and to experience parenthood is one of the primal need for human beings. In many culture child birth is considered as the natural result of love and marriage. For most people childbearing and parenthood are major life events involving goals and plans for the future. Pregnancy is one of life's most profound experiences for some couples while unplanned and unwanted for others.

The birth of the baby is a significant life event influenced by cultural norms and expectations. But some couples are not experiencing the pleasure of parenthood. Inability to conceive is not only a serious, costly and burdensome problem, it is also a prestigious issue for men and particularly for women's well being by affecting their personal, interpersonal, social and religious expectations which cause a sense of failure, marital disharmony, loss and exclusion.

Infertility is defined as the inability to conceive after 1 year of unprotected regular sexual intercourse. Couples with primary infertility have never conceived and couples with secondary infertility may have conceived before but are unable to conceive again. **(Emily Slone Mckinney, et al)**[11]

80% couples achieve conception within one year of having regular intercourse with adequate frequency. 10% couples will become pregnant and 100% remain infertile by the end of second year. **(D.C.Dutta)**[10]

An estimated rate of infertility among 47 developing countries showed that 187million couples were infertile in which 18 million couples had primary infertility and the remaining 169 million couples had secondary infertility. **(WHO, 2009)**[72]

District Level Household Survey (2010)[73] revealed that the lifetime primary and secondary infertility for married women aged 20-49 years with at least two years of married life was found to be 8.8% and the prevalence of primary infertility was found to be 6.4% in India. The percentage of women seeking treatment for lifetime and primary infertility was 83%.

Approximately 1/3 rd of infertility problems are attributable to female factors and < 1/3rd are tied to male factors. 20% of problems result from combined male and female factors. In approximately 15% of cases, infertility cannot be classified as attributable to any one party or cause. **(American Society for Reproductive Medicine, 2006)**[29]

The main factors contributing to infertility in males are defective spermatogenesis, failure to deposit sperm high in the vagina due to erectile dysfunction, ejaculatory defect and hypospadiasis. Sperm abnormality like loss of sperm motility, abnormal sperm morphology, errors in the seminal fluid may also lead to male infertility.

The female factors contributing to infertility are ovulatory dysfunctions, tubal obstruction, anatomical and physiological defects in the cervix and uterine factors like fibroid uterus, endometritis etc. Advanced age beyond 35 especially of wife, infrequent intercourse, lack of knowledge of coital technique and timing of coitus to utilize the fertile period, apareunia or dyspareunia, anxiety and apprehension, use of spermicidal lubricants and immunological factors may also cause infertility.

The modern treatment modalities like artificial insemination, assisted reproductive technology, ovum and sperm donor program and surrogacy are also available for the correction of fertility problem in infertile couples.

India's 9th five year plan introduced management of sterility under RCH programme because it is essential that couples without children get access to essential clinical examination, investigation, management and counseling.

A global survey of 17,500 people of childbearing age from 10 countries in Europe, Africa, Middle East and South America revealed that on the whole level of knowledge regarding fertility and biology of reproduction was very poor. **(World Fertility Awareness Month, 2006)[86]**

Knowledge imparted to the couples create positive attitude towards infertility and increases the treatment seeking behavior of couples in its early stage. The main focus of this study was to teach the couples regarding infertility in order to increase their knowledge and to help them to reach their goal of becoming parents.

NEED FOR THE STUDY

Childbirth is the most joyous event in every woman's life. Parenthood is viewed in most cultures as an entry into adulthood, and also an important part of status. Some couple delay pregnancy due to the changing lifestyle and career involvement. At the same time, many couples experience difficulty in conceiving and carrying a child. Infertility may be perceived as a tragedy in the lives of many women in developing countries. It is considered as the responsibility of the females to give birth to their own children. Women without children may be stigmatized and isolated from the society. Childlessness leads to an increased incidence of domestic violence in female partner and remarriage in male partner.

The desire for children is strong in many couples. If a couple did not achieve pregnancy or produce a living child as expected, the man and woman often experience psychological distress. They may feel unlovable or unappealing to their mates.

On the basis of **current world population (2006-2007)[68]**, 72.4 million people were infertile and of these 40.5 million were seeking infertility medical care. According to **Delhi IVF Fertility Research centre (2006)[81]** infertility affects as many as 1 in 6 couples and 8-10 million infertile couples were estimated in India.

Damayanti datta , (2010)[76] published an article in India Today reported that one out of five couples was childless,16% of married women were childless in the cities, 50% increase in infertility in urban India since 1981, 17% of childless women face marital problems compared to 2% with children,10% of young males have severe defects in sperm quality, quantity and production, 6% of male infertility and 14% of ovarian failures are due to chromosomal abnormalities, 90 million Indians suffer from erectile dysfunction. 20 to 30% was the growth rate of the infertility sector and 40,000 cycles of infertility treatment were done in India.

Jacky Bovin et al., (2006)[44] estimated the prevalence of infertility and the proportion of the couples seeking medical help using studies from 85 citations since 1990 and from 25 population surveys sampling 172 413 women in more developed countries (European countries) and less developed countries like Sub-Saharan Africa, India, China etc. The study results revealed that the prevalence in more developed nations were 3.5%-16.7% and less developed countries were 6.9%-9.3%. The study concluded that overall 9% couples are infertile with 56% couples seek medical care in both more and less developed countries.

Pasi A L., et al, (2011)[50] conducted a study to assess the prevalence of infertility and the association between infertility and gender based violence based on the data collected by National Family Health Survey-3 of India in year 2005-06

from 23,722 women in reproductive age group. The study results revealed that 77.8% women had experienced physical or sexual violence among 2,023 (8.5%) infertile women and only 6.1% women had experienced physical or sexual violence among 21,699 women with one child.

Dr.Hrishikesh Pai, (2011)[77] stated that out of 300 million couples in the reproductive age group (18-44 years), approximately 10% (30 million) couples were infertile and 20% of them need IVF treatment.

Dyer (2007)[39] stated that the inability to procreate offspring is considered as a personal tragedy and a curse for the couple, impacting on the entire family and even the local community and has severe negative psychosocial consequences. **Bunting and Bovin., (2007)**[43] found that knowledge about fertility issues is a core motivator behind engaging in the medical process for fertility problems

Dr.Duru Shah, (2011)[77] an infertility expert stated that nearly 1in 5 healthy men between 18 and 25years had an abnormal sperm count due to environmental issues and their sperm counts were declining. The other factors were wearing tight underwear or trousers, bathing in very hot water, sitting for long hours, pesticide exposure and being overweight in which fat layers sag on the testicles. Laptops also affect fertility, as they are positioned close to the scrotum.

Dr.Priya Selvaraj (2009)[78], Assistant Director, GG hospital Chennai stated that delayed child birth due to late marriage and rise in the number of male infertility are the two main factors hindering conception. Career demands, long working hours, lifestyle disorders like diabetes mellitus and hypertension, smoking and alcohol consumption, stress and obesity in females can also leads to infertility. She suggested making awareness among the couples regarding dietary management and treatment options is the best solution in overcoming this problem.

Couples may delay seeking medical advice because of the fear of final definite diagnosis, emotional stress, the physical discomfort of tests they would have to undergo and admitting failure in their efforts to conceive.

Fertility and reproductive health are largely neglected areas in health education. Knowledge about the biological process of reproduction (eg: when is a woman fertile, how long sperm survive) and the definition and prevalence of infertility are important as they help people to understand when is the optimal time for unprotected intercourse and the likelihood of having difficulties in conceiving. However equally important is knowledge about the factors that may reduce the chances of conception because lack of knowledge in these areas may mean that people unintentionally contribute to their own fertility problems.

Researcher feels that the knowledge is a key factor associated with fertility self care i.e, knowing about their own fertility potential and the initiation of treatment when needed concluding that education about fertility issues is needed to prevent fear and unnecessary delay in seeking help when faced with problems in conceiving. The investigator personally witnessed the couples with primary infertility and has taken up the present study to create awareness and improve their knowledge and to develop a positive attitude towards primary infertility.

STATEMENT OF THE PROBLEM

A pre experimental study to assess the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples at selected villages, Thiruvallur District.

OBJECTIVES

1. To assess the pre and post test level of knowledge and attitude of couples regarding infertility.
2. To compare the pre and post test level of knowledge and attitude of couples regarding infertility.

3. To compare the pre and post level of knowledge and attitude between husband and wife regarding infertility.
4. To correlate the overall mean difference in the knowledge score with attitude score of couples regarding infertility.
5. To associate the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables.

OPERATIONAL DEFINITION

Effectiveness

Refers to the outcome of multimedia educational package on knowledge and attitude regarding infertility which was measured by the structured interview schedule and modified 4 point Likert scale devised by the investigator.

Multimedia educational package

Refers to the use of compact disc which includes images and video clippings on general information, causes, diagnostic evaluation, treatment, and lifestyle modification regarding infertility that enhance the knowledge and attitude among couples with infertility.

Knowledge

Refers to the ability of the couples to respond to the questions on general information, causes, diagnostic evaluation, treatment, and lifestyle modifications regarding infertility, elicited by a structured interview schedule.

Attitude

Refers to the couple's perception regarding infertility which was assessed using Modified 4 point Likert Scale developed by the investigator.

Infertility

Refers to the failure of the couples to conceive after 1 year of unprotected sexual life.

Couples

Refers to the married couples with wives in the reproductive age group of 15-45 years, who had never conceived after 1year of unprotected sexual life and not underwent any assisted reproductive techniques.

ASSUMPTIONS

1. The couples may have some knowledge regarding infertility.
2. Providing multimedia educational package may enhance the knowledge of couples.
3. Enhanced knowledge may create a positive attitude towards infertility.

NULL HYPOTHESES

NH_1: There is no significant difference between the pre and post test level of knowledge regarding infertility among couples at the level of $p<0.05$.

NH_2: There is no significant difference between the pre and post test level of attitude regarding infertility among couples at the level of $p<0.05$.

NH_3: There is no significant difference between the pre and post test level of knowledge and attitude between the husband and wife at the level of $p<0.05$.

NH_4: There is no significant relationship between the mean difference in the knowledge score with attitude score of the couples regarding infertility at the level of $p<0.05$.

NH_5: There is no significant association between the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables at the level of $p<0.05$.

DELIMITATION

The study was delimited to the period of 4weeks.

CONCEPTUAL FRAMEWORK

A conceptual framework or model is made up of concepts, which are the mental images of the phenomena. A conceptual framework provides the guidelines

to attain the objectives of the study based on the theory. It is the schematic representation of activities, steps and action of the study. A conceptual framework is used in research to outline the possible course of action to present a preferred approach to an idea or thought.

The Investigator adopted **PEPLAU'S INTERPERSONAL RELATIONSHIP THEORY**, as a basis for conceptual framework, which was aimed to assess the effectiveness of multimedia educational package on knowledge and attitude of couples regarding infertility.

Hildegard Peplau a nurse theorist developed the first conceptual curriculum for the Bachelor of Science in nursing program and proposed interpersonal theory, which describes the interpersonal process and therapeutic relationship as the ways to attain goal. For this a nurse plays various roles such as a teacher, resource person, counselor, change agent and leader.

In this study the investigator act as a teacher, counselor, resource person and change agent to improve the knowledge and to create favourable attitude among couples.

Peplau's theory is composed of 4 phases.

1. Orientation phase
2. Identification phase
3. Exploitation phase
4. Resolution phase

ORIENTATION PHASE

During the orientation phase, the couples has "felt need" and seeks professional assistance, the investigator helps the couples to recognize and understand their problem and determine their need for help.

In this study the investigator help the couples to recognize and understand their problem by collecting the demographic variables such as age, religion, education, occupation, number of working hours, food habits, personal habits, body mass index, age at menarche, nature of menstrual cycle, duration of married life, family history of infertility, co-morbidity and assess the pretest level of knowledge and attitude regarding infertility by using structured interview schedule and Modified 4 point Likert scale.

IDENTIFICATION PHASE

Investigator and couples collaboratively sets the goal to improve the knowledge and to develop favorable attitude regarding infertility. The mutual goal setting was done with a belief that multimedia educational package will enhance the knowledge and attitude of couples regarding infertility.

EXPLOITATION PHASE

In exploitation phase, couples attempt to drive full value which is offered by the investigator through the interpersonal relationship. Investigator aids the couples to solve their problem.

In the study investigator administer the multimedia educational package on general information, causes, diagnostic evaluation, treatment, and lifestyle modification regarding infertility to enhance their knowledge and attitude.

RESOLUTION PHASE

After couple’s need have been met by collaborative effort of the investigator and the couples, the therapeutic relationship ends. At this phase the investigator analyzes the level of knowledge and attitude of couples in pre and post test.

For positive outcome-i.e. adequate knowledge and favorable attitude regarding infertility requires further enhancement.

For negative outcome-i.e. inadequate knowledge and unfavorable attitude regarding infertility need to be reinforced for further learning.

OUTLINE OF THE REPORT

Chapter I : Dealt with introduction, background of the study, need for the study, statement of the problem, objectives, operational definitions, assumptions, null hypotheses, delimitation and conceptual framework.

Chapter II : Contains the review of literature related to the present study.

Chapter III : Presents the methodology of the study and plan for data analysis.

Chapter IV : Focuses on data analysis and interpretation.

Chapter V : Enumerates the discussion and findings of the study.

Chapter VI : Consist of summary, conclusion, implications, recommendations and limitations of the study.

The study report ends with selected Bibliography and Appendices.

CHAPTER – II

REVIEW OF LITERATURE

Review of literature entails systematic identification, selection and critical analysis of scholarly publications, unpublished scholarly print materials, audiovisual materials and personal communications to the problem of interest. Hence the investigator intended to review the literature available regarding infertility using both research and non-research materials.

This chapter deals with a broad view of related literature and studies in the following sections.

Section–A : Studies related to the prevalence and causes of infertility.
Section–B : Studies related to the impact of lifestyle factors on infertility.
Section–C : Studies related to management for infertility.
Section–D : Studies related to knowledge and attitude regarding infertility.
Section–E : Studies related to effectiveness of educational package on infertility.

SECTION – A: Studies related to the prevalence and causes of infertility.

Paul C. Adamson, et al., (2011)[51] conducted a descriptive study to assess the prevalence and correlates of primary infertility among 897 sexually active young women aged 15-30 years in Mysore, India. The results revealed that the mean age of women was 25.9 years and the prevalence of primary infertility was 12.6%. the main factor associated with primary infertility was Herpes Simplex Virus-2 sero positivity.

Chatterjee Siddhartha, et al., (2010)[35] conducted a study to review video-laparoscopic evaluation to find the causes for infertility and laparoscopic corrective techniques in alleviating infertility at Repose Fertility Clinic, Kolkata from 1998-2007. The study results found that among 1726 cases of unexplained

infertility, 846 clients had minor tubal defects and concluded that different laparoscopic surgical techniques were used to restore structural and functional integrity of fallopian tubes.

Roupa.Z, et al., (2009)[53] conducted a descriptive study to investigate the causes of infertility in women of reproductive age among 110 infertile women in a private Assisted Reproductive Center using random sampling method. The results of the study showed that 27.4% of infertility cases were due to fallopian tubes dysfunction, 24.5% of cases were due to unknown causes, 20% cases were due to disorders of menstruation, 9.1% were due to problems of uterus, 2.7% of cases were due to sexual disorders, 2.7% cases were due to increased age and 45.5% of them were smokers.

Sayeed Unisa, (2008)[54] conducted a study using a multi stage stratified systematic sampling design to estimate the of prevalence of infertility and proportion of women seeking treatment for fertility by different socio-economic characteristics based on District Level Household Survey-3 covering 611 districts in India. Among 643,944 married women, lifetime primary/secondary infertility was found to be 8.8%, current primary infertility was found to be 2.3% and the percentage of women seeking treatment for primary infertility was around 83%. The study revealed that there is a huge demand of fertility services in India.

Nagaria Tripti, et al., (2008)[49] conducted a study to evaluate the role of serum anti sperm antibody (ASA) in infertility in Pt.J.N.M.Medical College, Rajpur among couples with primary and secondary infertility. Among 105 couples, serum ASA-positive males were 38(39.19%), of which definite serum ASA positive were 9(8.57%), borderline (equivocal) were 29(27.61%), and negative were 67(63.08%). Among females, serum ASA positive were 42(40%), in which definite ASA positive were 19(18.09%), borderline 23(21.9%), and negative 63(60%) and pregnancy was achieved in 45.23% ASA-positive females and 31.57% ASA-

positive males. The study concluded that Serum ASA prevent the motility of sperm and thus it can be a cause for unexplained infertility.

Kumar D, (2007)[66] conducted a study using purposive sampling design in the Sidhi district of Madhya Pradesh in Central India from a total of 1305 people in 284 households to investigate the prevalence of infertility among Khairwar and non-Khairwar tribes.133eligible couples belonged to the Khairwar tribes and 99 eligible couples belonged to non-Khairwar tribes The study showed that the prevalence of infertility was 33(14.2%) out of 232 women. The number of women with infertility is higher in the Khairwars (17.2%) compared with non-Khairwars(10%).

Yadollah Ahmadi Asr Badr, et al., (2006)[59] conducted a study to determine the prevalence of primary and secondary infertility in Tabriz using cluster random sampling and to evaluate the rate of seeking treatment for infertility among the 3600 couples from 360 zones. The study concluded that the incidence of infertility was 3.27% among which 2.04% as primary and 1.23% as secondary infertility and the treatment seeking behavior was 79.6% and 67.6% among patients with primary and secondary infertility, respectively.

Section–B: Studies related to the impact of lifestyle factors on infertility.

Dushyant Singh Gaur, et al., (2010)[38] conducted a prospective study to determine the specific impact of alcohol and smoking on semen quality of male partners of couples seeking treatment for primary infertility at the Himalayan Institute of Medical Sciences, Uttarakhand, India. Among 100 alcoholics and 100 cigarette smokers with 100 strict nonalcoholic and nonsmoker males, 12% alcoholics and 6% smokers showed normozoospermia compared to 37 % nonalcoholic nonsmoker males. Heavy alcoholics and smokers showed asthenozoospermia, teratozoospermia and oligozoospermia.The study results concluded that alcohol abuse targets sperm morphology and sperm production where smoking affects sperm motility and seminal fluid quality.

Chavarro, et al., (2007)[36] conducted a cohort study to evaluate the relation of dietary pattern and other lifestyle practices to risk of ovulatory disorder infertility among 17,544 women with a history of infertility for 8 years. The study concluded that the combination of five or more low risk lifestyle factors, including diet, weight control, and physical activity was associated with a 69% lower risk of ovulatory disorder infertility. The result revealed that following a "fertility diet" pattern may favorably influence fertility and the majority of infertility cases due to ovulation disorders may be preventable through modifications of diet and lifestyle.

Kelly – Weeders, (2006)[65] conducted a study to identify the impact of lifestyle risk factors on female infertility using a re-examination of the 1995 National Survey of Family Growth (NSFG) on a sample of 824 women between the ages of 16 and 45 years in USA. The results concluded that the factors associated to infertility were increasing age, a history of an ectopic pregnancy, current smoking, obesity, and self reported health status.

Adiga SK, et al., (2005)[32] conducted a retrospective study to investigate the semen quality among 7770 infertile individuals at Kasturba Hospital, Manipal over a period of 13 years from 1993. The results showed that average sperm density, sperm motility and normal sperm morphology among infertile men during 2004-2005 were 26.61 ± 0.71 millions/mL, 47.14% and 19.75% respectively but the values during 1993-1994 were 38.18 ± 1.46 millions/mL, 61.16% and 40.51% respectively. The study revealed that the quality of human semen is deteriorating in the southern part of the India over the years, probably due to environmental, nutritional, life style or socioeconomic factors.

Section–C: Studies related to management for infertility

Anupama H, et al., (2011)[34] published a case report of a woman with primary infertility from Hyderabad who had premature ovarian failure since nine years. She was found to have female karyotype with terminal Xq deletion. They concluded that karyotyping is indicated for women with primary amenorrhoea,

dysovulatory infertility and repeated failed induction to prevent unnecessary treatment burden.

Gupta Archana, (2009)[42] conducted a correlational study among 91 male subjects with primary infertility from a referral genetic center, Lucknow. The study found that 10.9% subjects had chromosomal abnormality, 15.5% of subjects with non-obstructive azoospermia had abnormal karyotypes and 4.4% patients with non-obstructive azoospermia had 47,XXY chromosomal constitution. The study results concluded that there is a high prevalence of chromosomal abnormality in infertile male with moderate or severe oligospermia or non-obstructive azoospermia.

Rozati Roya, et al., (2007)[52] conducted a study to assess the efficacy of in vitro fertilization and intra uterine insemination among 150 couples with unexplained and mild male factor infertility from Maternal health and Research Trust and Owaisi Hospital, Hyderabad. 75 couples were treated with IVF and 75 were treated with IUI. The study concluded that IUI is the first treatment of choice with lower cost and equal efficacy as IVF and treatment within the context of specialized IVF Center will be more efficient and safer for mild male factor and unexplained infertility.

Widge A., (2005)[58] conducted a study to find the social context of infertility and women's perception and experience with IVF among 22 couples with involuntary childlessness who sought invitro fertilization from clinics at New Delhi and Mumbai. The results found that the women with infertility was stigmatized and isolated and their status and security were affected and IVF procedures cause physiological, emotional and financial stress to women with inadequate counseling. The study concluded that effective counseling regarding infertility and its modern treatment was essential for the couples to cope with psychosocial and sexual problems.

Section–D: Studies related to knowledge and attitude regarding infertility

Gundla Sowjanya, (2011)[41] conducted a descriptive study to assess the knowledge and attitude of infertile women regarding Assisted Reproductive Techniques in Gunasheela IVF center, Bangalore. Among 50 infertile couples, 64% had moderately adequate knowledge and 80% had neutral attitude towards Assisted Reproductive Techniques and there was a positive correlation between the knowledge and attitude of couples. The study concluded that there was a need for health education to couples who were attending the infertility clinic.

Umamageshwari.K., (2010)[81] conducted a descriptive study to assess the knowledge and attitude on surrogacy among 100 primary infertile couples at GG Hospital, Chennai. The study results revealed that 60% couples had adequate knowledge, 33% had moderately adequate knowledge, 7% had inadequate knowledge, 68% had favourable attitude, 25% had moderately favourable attitude and 7% had unfavourable attitude. The study concluded that couples had adequate knowledge and favourable attitude towards surrogacy.

Lujain Anwar Al Khazrajy, et al., (2009)[45] conducted a cross sectional study to assess the knowledge and attitude of infertile male patients attending Kamal Al Samaraee fertility center, about Assisted Reproductive Technique(ART) among 203 male patients. The study result showed that there is significant positive correlation between the patient's knowledge about ART and the level of education. 80% of the participants refused gamete donation. The study concluded that there was lack of knowledge about many aspects of ART, also the attitudes of the participants was highly influenced by cultural and religious believes and need education to make awareness among the participants.

Vause.TD, et al., (2009)[57] conducted a study to examine the preconception knowledge and attitude in 400 infertility patients in Ottawa Fertility Center, Ottawa. The study found that there were knowledge gaps in the highly motivated population of infertile women who were planning for conception and women who

were more educated had more knowledge about the effects of the mother's age, exercise, alcohol exposure, and smoking on pregnancy. The study results concluded that there is a need to educate couples regarding the pre-pregnancy lifestyle.

Swetha .R., (2009)[80] conducted a descriptive study to assess the treatment seeking behavior for infertility among 90 primary infertile women at Apollo Main Hospital, Chennai using non probability purposive sampling technique. The study 66.7% women had regular treatment seeking behavior to avoid the consequences of childlessness.

Jacky Boivin, (2008)[43] conducted a study to assess three areas of knowledge namely infertility risk factors, fertility myths and illusory benefits of healthy habits on female fertility among 110 female and 39 male postgraduate and undergraduate students from Cardiff university. The study results revealed that young people were aware about the negative lifestyle factors which reduce fertility but falsely believed that fertility myths and the healthy habits had an impact on pregnancy rates.

Farnaz Sohrabvand, et al., (2005)[40] conducted a descriptive cross sectional study to assess the knowledge about ART and the attitude towards sperm or ovum donation with embryo reduction among 400 infertile couples in an infertility clinic of a university hospital. The study results revealed that 41.7% patients had good knowledge and 55.7% patients had poor knowledge about ART. 45.6% of men, 43.4% of women and 64.8% of patients with a history of passing previous ART cycles had a good knowledge. 95% of patients disagreed to have sperm or ovum donation or to undergo surrogacy. 22% of patients agreed with embryo reduction.

Amarjeet Singh, et al., (2005)[33] conducted a study to assess the knowledge and attitude towards infertility among 129 infertile couples in a rural area of North India. The study results revealed that 33% of women and 14% of men believed in supernatural causes to infertility. Majority said that infertility was medically

curable, men were of the view than women that one should bear a child within 1 year of marriage and infertility was the result of defect in both husband and wife. Women were less sure about the role of tuberculosis and veneral diseases in the etiology of infertility when compared to men.

Section–E: Studies related to effectiveness of educational package on knowledge and attitude regarding infertility

Alka Barua et al., (2009)[60] conducted a community based intervention research study to assess the effectiveness of community mobilization strategies (health education session) in improving reproductive health awareness and use of service Ahmednagar district of Maharashtra, India among 110 young couples. The study concluded that there is a marked increase in the awareness of couples and their treatment seeking behavior after the health education session.

Schmidt L, et al., (2005)[55] conducted a prospective cohort study of Danish people to evaluate a patient education programme focused on improving communication and stress management skills among couples in fertility treatment. The study results revealed that there was a bidirectional changes in communication and a significant increase in marital benefit between the couples.

Cousineau TM, et al., (2004)[37] conducted a study to develop and test the feasibility of a multimedia psychosocial support program for 62 individuals receiving infertility treatment in fertility centers, USA. 90% of the participants rated prototype satisfaction as good to excellent and the results strongly indicate an interest in an infertility multimedia support tool.

CHAPTER – III

RESEARCH METHODOLOGY

This chapter describes the methodology adopted in this study to assess the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples at selected villages, Thiruvallur District.

This phase of the study included selecting a research design, variables, setting of the study, population, sample, criteria for sample selection, sample size, sampling technique, development and description of the tool, content validity, pilot study, reliability of the tool, procedure for data collection and plan for data analysis.

RESEARCH DESIGN

The research design used in this study was one group pre test - post test within subjects design.

The investigator selected pre- experimental study as because control in the same setting was not possible.

Based on **Polit and Hungler (2011)[6]** the schematic representation of pre-experimental study frame work was;

GROUP	**PRE-TEST** **O1**	**INTERVENTION** **X**	**POST-TEST** **O2**
Couples	Pretest level of knowledge and attitude regarding infertility	Multimedia educational package on general information, causes, diagnostic evaluation, treatment, and life style modification regarding infertility	Post test level of knowledge and attitude regarding infertility

VARIABLES

Independent Variable

Multimedia educational package regarding infertility.

Dependent Variable

Knowledge and attitude of couples regarding infertility.

Extraneous Variables

The extraneous variables were age, religion, education, occupation, number of working hours, monthly income, food habits, personal habits, body mass index, age at menarche, nature of menstrual cycle, years of marriage, family history of infertility and co-morbidity.

SETTING OF THE STUDY

The study was conducted in the following villages namely, Kanniyamman Nagar, Veerapuram, Arakkampakkam, Bangarapettai, Kadhavur and Melpakkam, Thiruvallur District. The health care facility for these rural community was available through Subcenter, Primary Health Center and Omayal Achi Community Health Centre.

POPULATION

Target Population

The target population for the study includes all the married couples with wives in the reproductive age group of 15-45 years with infertility who were residing at Kanniyamman Nagar, Veerapuram, Arakkampakkam, Bangarapettai, Kadhavur and Melpakkam, Thiruvallur District.

Accessible Population

Accessible population for the study was the couples with primary infertility who had not undergone assisted reproductive techniques and who were available during the period of data collection.

SAMPLE

The couples who fulfilled the sample selection criteria formed the samples for the study.

CRITERIA FOR SAMPLE SELECTION

Inclusive criteria

1. Couples who were not conceived after 1year of unprotected sexual life.
2. Couples who can understand Tamil or English.
3. Couples who were willing to participate in the study.

Exclusive criteria

1. Couples who had undergone assisted reproductive techniques.
2. Couple who attended infertility counseling or classes.

SAMPLE SIZE

A sample of 30 couples who fulfilled the sample selection criteria were selected for the study.

SAMPLING TECHNIQUE

The samples were selected by purposive sampling technique. The investigator informed the selected samples about the study and obtained their written consent to participate in the study.

DEVELOPMENT AND DESCRIPTION OF THE TOOL

The tool was constructed after an extensive review of literature and guidance from medical and nursing experts and with the investigator's personal and professional experience, a structured interview schedule was developed to assess the knowledge and modified 4 point Likert scale to assess the attitude of couples regarding infertility.

The tool constructed in this study was divided into four sections.

Section A: Demographic Variables

The demographic variables for husband were age, educational status, religion, occupation, number of working hours, monthly income, body mass index, food habits, personal habits, years of marriage, family history of infertility and co-morbidity.

The demographic variables for wife were age, religion, education, occupation, number of working hours, food habits, body mass index, age at menarche, nature of menstrual cycle, duration of married life, family history of infertility and co-morbidity.

Section B: Tool to assess the level of knowledge

It consisted of structured interview schedule to assess the knowledge regarding infertility among couples.

S.No	Items	No. of Questions
1.	General information	5
2.	Causes	3
3.	Diagnostic evaluation	3
4.	Treatment	10
5.	Lifestyle modification	9
	TOTAL	**30**

Scoring Key:

Each item was objective type and closed ended with a single correct answer. Every correct answer was given a score of “1’’ mark and wrong answer was given “0’’mark. The total score of the item was 30.

The level of knowledge was categorized as:

SCORE	LEVEL OF KNOWLEDGE
<50%	Inadequate knowledge
50-75%	Moderately adequate knowledge
>75%	Adequate knowledge

Section C: Tool to assess the level of attitude

It consisted of Modified 4 point Likert Scale to assess the attitude of couples regarding infertility.

Scoring Key:

S.No.	Item	Strongly agree	Agree	Disagree	Strongly disagree
1.	POSITIVE	4	3	2	1
2.	NEGATIVE	1	2	3	4

The level of attitude was categorized as:

SCORE	LEVEL OF ATTITUDE
<50%	Unfavourable attitude
50-75%	Moderately favourable attitude
>75%	Highly favourable attitude

Section D: Intervention tool

Consisted of the intervention tool, the multimedia educational package regarding infertility using the compact disc which includes images and video clippings on general information on fertility, causes, diagnostic evaluation and treatment for infertility and the lifestyle modifications to be followed by the couples to enhance fertility.

CONTENT VALIDITY

Content validity of the data collection tool and intervention tool was obtained from 2 Medical experts and 6 Nursing experts in the field of Obstetrics and Gynaecology and the tool was modified as per the consensus of all experts and research committee, ICCR.

- The suggestion given by the experts were:
  - Objectives and hypotheses for comparison of pre and post test level of knowledge and attitude between husband and wife regarding infertility was instructed to be included.
  - Separate demographic variables for husband and wife to be included.

All the above suggestions were added before conducting the main study data collection with concurrence of all experts in the field who did the content validity.

ETHICAL CONSIDERATION

The ethical principles followed in the study were,

I. Beneficence

i) Freedom from harm and discomfort

Participants were not subjected to unnecessary risks for harm or discomfort during the study period.

ii) Protection from exploitation

Participants were assumed that their participation or information provided would not be used against them in any way.

II. Respect for Human Dignity

Participants were given full rights to ask questions, refuse to give information and also to withdraw from the study.

A written consent was obtained from the participants initially for their willingness to participate in the study.

III. Justice

The selection of study participants was completely based on research requirements.

A full privacy was maintained throughout the process of data collection.

PILOT STUDY

The pilot study is a trial run, done in preparation for the main study. The pilot study was planned and conducted after a formal research proposal presentation approval by the ethical committee, ICCR and the faculty of Omayal Achi College of nursing. It was conducted in the month of June 2011, for a period of 1 week (from 11^{th}-17^{th}) at Keezhkondaiyar Village, Thiruvallur District after receiving a formal permission letter from the Principal, Omayal Achi College of Nursing and the village leader of selected village. The investigator conducted the pilot study by selecting 5 couples who fulfilled the sample selection criteria by purposive sampling technique.

The investigator gave brief introduction about self and the purpose of the study to the couples. They were made to sit comfortably in a well ventilated room and confidentiality regarding the data was assured to win their co-operation during data collection. After obtaining verbal and written informed consent for willingness to participate in the study, data collection was carried out by using Structured Interview Schedule to assess the knowledge and Modified 4 point Likert Scale to assess the attitude of the Couples. The investigator sat face to face to the couples and conducted the pretest separately for husband and wife, which took 15-20 minutes to assess the knowledge and attitude. Pretest was conducted separately for all the 5 couples on the same day. After that the multimedia educational package was given to the couples together in a common place for 25-30mts.

Post test was done after 7 days to assess the mean improvement level of knowledge and attitude regarding infertility among the couples using the same tool.

The result of the pilot study revealed the feasibility and practicability of the study and after which the plan for actual study was made.

RELIABILITY OF THE TOOL

The reliability of the tool was established by inter-rater method to assess the reliability of the structured knowledge questionnaire and the attitude scale. The reliability score was r =0.85 which indicated positive correlation. Hence the tool was considered highly reliable for proceeding with the main study.

PROCEDURE FOR DATA COLLECTION

The investigator obtained permission from the International Center for Collaborative Research (**ICCR**) and ethical committee approval to conduct the main study. A formal permission was obtained from the Principal, Omayal Achi College of Nursing and the Village President.

The investigator selected 30 couples from 6 villages who fulfilled the sample selection criteria by using purposive sampling method. The data for the study was collected within the period of 4 weeks. The investigator gave brief information about self and the purpose of the study to the couples. The couples were made to sit comfortably in a well ventilated room and confidentiality regarding the data was assured. After obtaining their verbal and written informed consent for willingness to participate in the study, the investigator sat face to face to the husband and wife and data collection was carried out separately, by using structured interview schedule to assess the knowledge and Modified 4 point Likert scale to assess the attitude regarding infertility.

The investigator conducted the pretest for all couples from one residential area on the same day from 6am – 5pm which took 15-20 minutes each to assess the knowledge and attitude for husband and wife separately. The multimedia educational package was given by the investigator on the next day by gathering the study samples in their own setting which took 25-30 minutes. The doubts of the

couples were clarified and a pamphlet on infertility was given to sustain the knowledge of the couples. As planned earlier the investigator conducted the post test after 7 days, for the same couples using the same tool by following the same procedure.

PLAN FOR DATA ANALYSIS

Data was analysed by both descriptive and inferential statistics.

Descriptive Statistics

1. Frequency and percentage distribution was used to analyse the demographic variables of infertile couples.
2. Mean and standard deviation was used to assess the pre and post test level of knowledge and attitude of the infertile couples.

Inferential Statistics

1. Paired ‘t’ test was used to compare the pre and post test level of knowledge and attitude among infertile couple.
2. Karl Pearson Correlation Coefficient ‘r’ was used to correlate the knowledge and attitude among infertile couples.
3. One way ANOVA and unpaired ‘t’ test was used to associate the knowledge and attitude with selected demographic variables.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of the data collected from 30 couples regarding infertility. The data collected was organized, tabulated and analyzed according to the objectives. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

ORGANISATION OF THE DATA

SECTION A : Description of the demographic variables of couples.

SECTION B : Assessment of pre and post test level of knowledge and attitude of couples regarding infertility.

SECTION C : Comparison of pre and post test level of knowledge and attitude of couples regarding infertility.

SECTION D : Comparison of pre and post test level of knowledge and attitude between the husband and wife regarding infertility.

SECTION E : Correlation between mean improved knowledge score with attitude score of couples regarding infertility.

SECTION F : Association of mean improved knowledge and attitude score of couples with selected demographic variables.

SECTION A: DESCRIPTION OF THE DEMOGRAPHIC VARIABLES OF COUPLES.

Table 1(a) : Frequency and percentage distribution of demographic variables with respect to age, religion and education.

n = 30

Sl.No.	Demographic Variables	Husband		Wife	
		No.	%	No.	%
1.	**Age in years**				
	<25	2	6.67	3	10.00
	26 – 32	13	43.33	9	30.00
	33 – 39	11	36.67	16	53.33
	40 – 46	4	13.33	2	6.67
	>47	0	0.00	0	0.00
2.	**Religion**				
	Hindu	27	90.00	27	90.00
	Christian	2	6.67	2	6.67
	Muslim	1	3.33	1	3.33
	Others	0	0.00	0	0.00
3.	**Education**				
	Non literate	4	13.33	4	13.33
	Primary school	9	30.00	11	36.67
	High school	12	40.00	14	46.67
	Higher secondary	2	6.67	0	0.00
	Graduate	3	10.00	1	3.33

Table 1(a) shows the frequency and percentage distribution of demographic variables like age, religion and education of couples.

With regard to the demographic variables of the couples, majority 13(43.33%) of husbands and 16(53.33%) of wives were in the age group of 26 – 32 yrs, 27(90%) of both husbands and wives were Hindus and 12(40%) of husbands and 14(46.67%) of wives had high school education.

Table 1(b):Frequency and percentage distribution of demographic variables such as occupation, number of working hours per day, family monthly income and food habit of couples.

n = 30

Sl. No.	Demographic Variables	Husband		Wife	
		No.	%	No.	%
4.	**Occupation**				
	Skilled	0	0.00	0	0.00
	Semi skilled	24	80.00	13	43.33
	Self employer	6	20.00	NA	NA
	Professional	0	0.00	1	3.33
	Housewife	NA	NA	16	53.33
5.	**Number of working hours per day**				
	7 – 8	19	63.33	13	43.33
	9 -1 0	11	36.67	1	3.33
	11 – 12	0	0.00	0	0.00
6.	**Monthly income**				
	<Rs.5000	23	76.66	13	43.33
	Rs.5000 – 10000	6	20.00	1	3.33
	>Rs.10000	1	3.33	0	0.00
7.	**Food habit**				
	Vegetarian	2	6.67	2	6.67
	Non vegetarian	28	93.33	28	93.33

Table 1(b) shows the frequency and percentage distribution of demographic variables with respect to occupation, number of working hours per day, family monthly income and food habits of the couples.

With regard to the demographic variables of the couples, majority 24(80%) of husbands perform semiskilled work and 16(53.33%) of wives were housewives, 19(63.33%) of husbands and 13(43.33%) of wives were working for 7-8 hours per day, 23(76.66%) of husbands and 13(43.33%) of wives were earning <Rs.5000 per month and 28(93.33%) of both husbands and wives were non vegetarian.

Table 1(c): Frequency and percentage distribution of demographic variables such as personal habits, body mass index, age at menarche and nature of menstrual cycle.

n = 30

Sl.No.	Demographic Variables	Husband		Wife	
		No.	%	No.	%
8.	**Personal Habits**				
	Smoking	7	23.33	NA	NA
	Alcohol intake	9	30.00	NA	NA
	Both	4	13.33	NA	NA
	Nil	10	33.33	NA	NA
9.	**Body Mass Index (BMI)**				
	<19	3	10	6	20.00
	20 – 24	20	66.67	12	40.00
	25 – 30	6	20.00	12	40.00
	>31	1	3.33	0	0.00
10.	**Age at menarche in years**				
	11	NA	NA	6	20.00
	12 – 14	NA	NA	20	66.67
	15 – 17	NA	NA	4	13.33
	>18	NA	NA	0	0.00
11.	**Menstrual Cycle**				
	Regular	NA	NA	17	56.67
	Irregular	NA	NA	13	43.33

Table 1(c) shows the frequency and percentage distribution of demographic variables with respect to personal habits, body mass index, age at menarche and nature of menstrual cycle.

With regard to the distribution of demographic variables of the couples, majority 10(33.33%) of husbands were non smokers and non alcoholics, 20(66.67%) of husbands had the body mass index of 20-24. Among wives 12(40%) had the body mass index of 20-24 and 12(40%) had the BMI of 25-30, 20(66.67%) attained their menarche at the age of 12-14 years and 17(56.67%) had regular menstrual cycle.

Table 1(d): Frequency and percentage distribution of demographic variables such as duration of married life, family history of infertility and co-morbidity.

n = 30

Sl.No.	Demographic Variables	Husband		Wife	
		No.	%	No.	%
12.	**Duration of married life**				
	1 – 3	4	13.33	4	13.33
	4 – 6	15	50.00	15	50.00
	7 – 9	6	20.00	6	20.00
	>10	5	16.67	5	16.67
13.	**Family history of infertility**				
	Yes	2	6.67	3	10.00
	i) First degree relative	2	6.67	3	10.00
	ii) Second degree relative	0	0.00	0	0.00
	iii) Third degree relative	0	0.00	0	0.00
	No	28	93.33	27	90.00
14.	**Co-morbidity**				
	Hypertension	0	0.00	NA	NA
	Thyroid problem	1	3.33	0	0.00
	Mumps	0	0.00	NA	NA
	Poly cystic ovarian disease	NA	NA	10	33.33
	Pelvic inflammatory disease	NA	NA	0	0.00
	Nil	29	96.67	20	66.67

Table 1(d) shows the frequency and percentage distribution of demographic variables like duration of married life, family history of infertility and co-morbidity.

With regard to the distribution of demographic variables of the couples, majority 15(50%) of them were within 4-6 years of married life, 28(93.33%) of husbands and 27(90%) of wives had no family history of infertility and 29(96.67%) of husbands and 20(66.67%) of wives had no associated co-morbidity.

SECTION B: ASSESSMENT OF PRE AND POST TEST LEVEL OF KNOWLEDGE AND ATTITUDE OF COUPLES REGARDING INFERTILITY.

Table 2 : Frequency and percentage distribution of existing level of knowledge of couples regarding infertility.

n = 30

Knowledge Aspects	Inadequate				Moderately Adequate				Adequate			
	Husband		Wife		Husband		Wife		Husband		Wife	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General Information	22	73.33	21	70.0	7	23.33	8	26.67	1	3.33	1	3.33
Causes	20	66.67	25	83.33	10	33.33	5	16.67	0	0	0	0
Diagnostic Evaluation	21	70.0	20	66.67	8	26.67	10	33.33	1	3.33	0	0
Treatment	24	80.0	22	73.33	6	20.0	8	26.67	0	0	0	0
Lifestyle Modification	24	80.0	20	66.67	6	20.0	9	30.0	0	0	1	3.33

Table 2 shows the frequency and percentage distribution of existing level of knowledge of couples regarding infertility.

The pre-test level of knowledge of couples revealed that regarding infertility 22(73.33%) of husbands and 21(70%) of wives had inadequate knowledge on general information, 20(66.67%) of husbands and 25(83.33%) of wives had inadequate knowledge on causes, 21(70%) of husbands and 20(66.67%) of wives had inadequate knowledge on diagnostic evaluation, 24(80%) of husbands and 22(73.33%) of wives had inadequate knowledge on treatment and 24(80%) of husbands and 20(66.67%) of wives had inadequate knowledge on lifestyle modification.

Table 3: Frequency and percentage distribution of post test level of knowledge of couples regarding infertility.

n = 30

Knowledge Aspects	Inadequate				Moderately Adequate				Adequate			
	Husband		Wife		Husband		Wife		Husband		Wife	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
General Information	6	20.0	1	3.33	7	23.33	15	50.0	17	56.67	14	46.67
Causes	10	33.33	10	33.33	13	43.33	14	46.67	7	23.33	6	20.0
Diagnostic Evaluation	2	6.67	0	0	16	53.33	20	66.67	12	40.0	10	33.33
Treatment	7	23.33	0	0	12	40.0	17	56.67	11	36.67	13	43.33
Lifestyle Modification	5	16.67	6	20.0	20	66.67	12	40.0	5	16.67	12	40.0

Table 3 shows the frequency and percentage distribution of post test level of knowledge of couples regarding infertility.

The post test level of knowledge of couples revealed that regarding infertility, 17(56.67%) of husbands had adequate knowledge and 15(50%) of wives had moderately adequate knowledge on general information, 13(43.33%) of husbands and 14(46.67%) of wives had moderately adequate knowledge on causes, 16(53.33%) of husbands and 20(66.67%) of wives had moderately adequate knowledge on diagnostic evaluation, 12(40%) of husbands and 17(56.67%) of wives had moderately adequate knowledge on treatment and 20(66.67%) of husbands and 12(40%) of wives had moderately adequate knowledge on lifestyle modification.

Table 4: Percentage distribution of pre and post test level of knowledge of couples regarding infertility.

n = 30

Knowledge	Inadequate				Moderately Adequate				Adequate			
	Husband		Wife		Husband		Wife		Husband		Wife	
	No	%	No	%	No	%	No	%	No	%	No	%
Pretest	24	80%	24	80%	6	20%	5	16.67%	0	0%	1	3.33%
Post test	4	13.33%	1	3.33%	17	56.67%	18	60%	9	30%	11	36.67%

Table 4 shows the percentage distribution of pre and post test level of knowledge of couples regarding infertility.

With regard to pretest knowledge of couples, majority 24(80%) of husbands and wives had inadequate knowledge, 6(20%) of husbands and 5(16.67%) of wives had moderately adequate knowledge and none of the husbands and 1(3.33%) of wives had adequate knowledge regarding infertility.

With regard to post test knowledge of husbands, 4(13.33%) of husbands and 1(3.33%) of wives had inadequate knowledge, 17(56.67%) of husbands and 18(60%) of wives had moderately adequate knowledge and 9(30%) of husbands and 11(36.67%) of wives had adequate knowledge regarding infertility.

n = 30

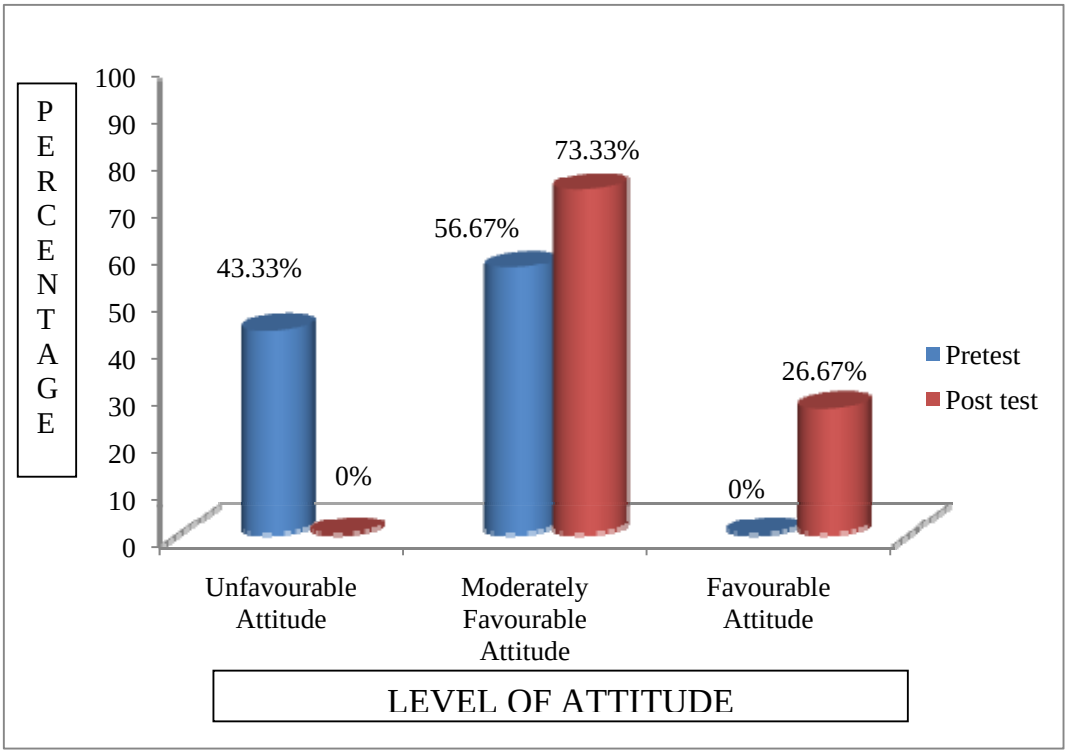

Fig.2: Percentage distribution of pre and post test level of attitude of husbands regarding infertility.

Figure 2 shows the percentage distribution of pre and post test level of attitude of husbands regarding infertility.

With regard to pretest attitude of husbands, 13(43.33%) had unfavourable attitude, 17(56.67%) had moderately favourable attitude and none of them had favourable attitude regarding infertility.

With regard to post test attitude of husbands, majority 22(73.33%) had moderately favourable attitude, 8(26.67%) had favourable attitude and none of them had unfavourable attitude regarding infertility.

n = 30

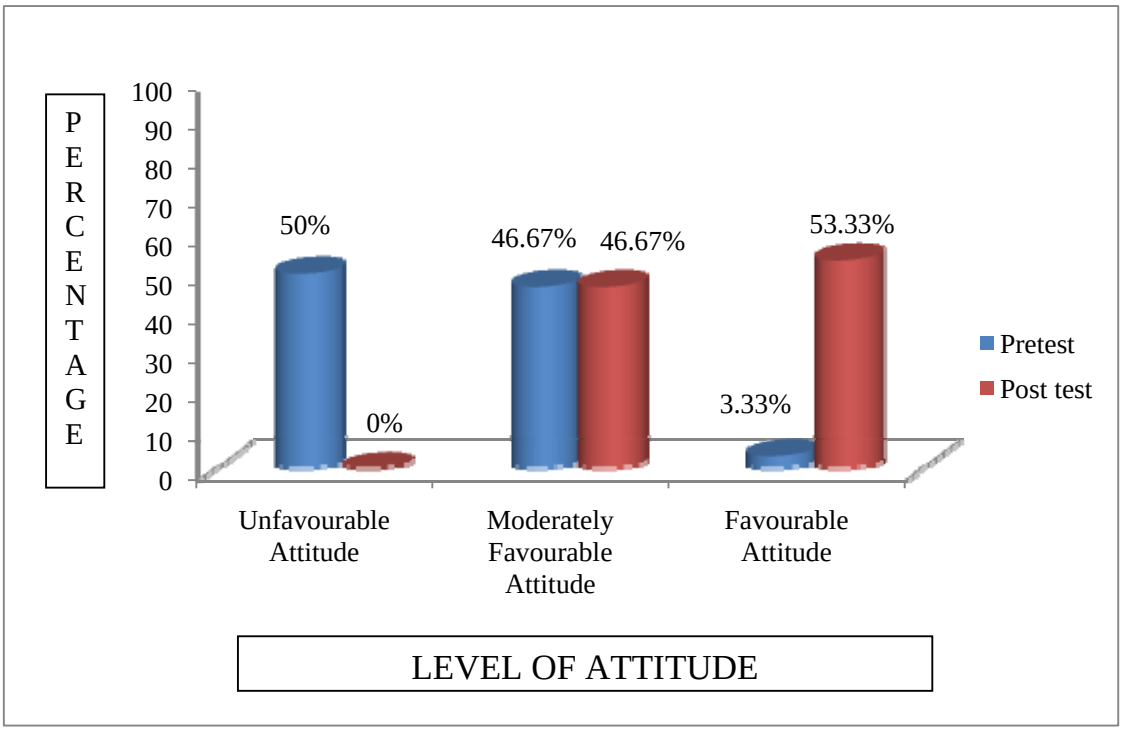

Fig.3: Percentage distribution of pre and post test level of attitude of wives regarding infertility.

Figure 3 shows the percentage distribution of pre and post test level of attitude of wives regarding infertility.

With regard to pretest attitude of wives, 15(50%) had unfavorable attitude, 14(46.67%) had moderately favorable attitude and 1(3.33%) had favorable attitude regarding infertility.

With regard to post test attitude of wives, majority 16(53.33%) had favorable attitude, 14(46.67%) had moderately favorable attitude and none of them had unfavorable attitude regarding infertility.

SECTION C: COMPARISON OF PRE AND POST TEST LEVEL OF KNOWLEDGE AND ATTITUDE OF COUPLES REGARDING INFERTILITY.

Table 5 : Comparison of pre and post test level of knowledge of couples regarding infertility.

n = 30

Knowledge	Pretest		Post Test		Mean Difference	't' Value
	Mean	S.D	Mean	S.D		
Husband	11.80	2.77	19.30	3.97	7.5	t = 12.698*** (S)
Wife	12.23	3.20	20.97	3.78	8.74	t = 12.396*** (S)

***p<0.001, S – Significant

Table 5 shows the comparison of pre and post test level of knowledge regarding infertility among couples.

When comparing the pre and post test level of knowledge of husband, the pre-test mean value was 11.80 with standard deviation 2.77. The post test mean value was 19.30 with standard deviation 3.97. The calculated 't' value was 12.698, which was greater than the table value and this indicated that there was statistically high significant difference at P < 0.001 level.

When comparing the pre and post test level of knowledge of wife, the pretest mean value was 12.23 with standard deviation 3.20. The post test mean value was 20.97 with standard deviation 3.78. The calculated 't' value was 12.396, which was greater than the table value and this indicated that there was statistically high significant difference at P < 0.001 level.

The overall mean improvement shows a significant rise in the knowledge of husbands from 11.80- 19.30 and wives from 12.23- 20.97 in pre and post test respectively, which is suggestive of effectiveness of multimedia educational package.

Table 6 : Comparison of pre and post test level of attitude of couples regarding infertility.

n = 30

Attitude	Pretest		Post Test		Mean Difference	't' Value
	Mean	S.D	Mean	S.D		
Husband	40.60	6.62	57.50	4.58	16.9	t = 12.188*** (S)
Wife	40.87	7.29	60.90	4.06	20.03	t = 15.821*** (S)

***p<0.001, S – Significant

Table 6 shows the comparison of pre and post test level of attitude of couples regarding infertility.

When comparing the pre and post test level of attitude of husband, the pre-test mean value was 40.60 with standard deviation 6.62. The post test mean value was 57.50 with standard deviation 4.58. The calculated 't' value was12.188, which was greater than the table value and this indicated that there was statistically high significant difference at P < 0.001 level.

When comparing the pre and post test level of attitude of wife, the pre-test mean value was 40.87 with standard deviation 7.29. The post test mean value was 60.90 with standard deviation 4.06. The calculated 't' value was 15.821, which was greater than the table value and this indicated that there was statistically high significant difference at P < 0.001 level.

The overall mean improvement shows a significant rise in the attitude of husbands from 40.60 – 57.50 and wives from 40.87 – 60.90 in pre and post test respectively, which is suggestive of effectiveness of multimedia educational package.

SECTION D : COMPARISON OF PRE AND POST TEST LEVEL OF KNOWLEDGE AND ATTITUDE BETWEEN HUSBAND AND WIFE REGARDING INFERTILITY.

Table 7 : Comparison of pretest level of knowledge and attitude between husband and wife

n = 30

Variables	Husband		Wife		Mean Difference	Unpaired 't' Value
	Mean	S.D	Mean	S.D		
Knowledge	11.80	2.77	12.23	3.20	0.43	t = -0.560 (N.S)
Attitude	40.60	6.62	40.87	7.29	0.27	t = -0.148 (N.S)

N.S – Not Significant

Table 7 shows the comparison of pretest level of knowledge and attitude between husband and wife regarding infertility.

When comparing the pretest level of knowledge between husband and wife, the pre-test mean value of husband was 11.80 with standard deviation of 2.77 and the mean value of wife was 12.23 with standard deviation of 3.20. The mean difference was 0.43 and the calculated 't' value for knowledge was -0.560, which was less than the table value and this indicated that there was no significant difference in the knowledge between the husband and wife.

When comparing the pretest level of attitude between husband and wife, the pre-test mean value of husband was 40.60 with standard deviation of 6.62 and the mean value of wife was 40.87 with standard deviation of 7.29. The mean difference was 0.27 and the calculated 't' value for attitude was -0.148, which was less than the table value and this indicated that there was no significant difference in the level of attitude between husband and wife.

Table 8: Comparison of post test level of knowledge and attitude between husband and wife

n = 30

Variables	Husband		Wife		Mean Difference	Unpaired 't' Value
	Mean	S.D	Mean	S.D		
Knowledge	19.30	3.97	20.97	3.78	1.67	t = -1.665 (N.S)
Attitude	57.50	4.58	60.90	4.06	3.4	t = -3.040** (S)

**p<0.01, S –Significant, N.S – Not Significant

Table 8 shows the comparison of post test level of knowledge and attitude between husband and wife regarding infertility.

When comparing the post test level of knowledge between husband and wife, the post-test mean value of husband was 19.30 with standard deviation of 3.97 and the mean score of wife was 20.97 with standard deviation of 3.78. The mean difference was 1.67 and the calculated 't' value for knowledge was -1.665, which was less than the table value and this indicated that there was no significant difference in the post test level of knowledge between husband and wife.

When comparing the post test level of attitude between husband and wife, the post-test mean value of husband was 57.50 with standard deviation of 4.58 and the mean value of wife was 60.90 with standard deviation of 4.06. The mean difference was 3.4 and the calculated 't' value for attitude was -3.04, which was greater than the table value and this indicated that there was a significant difference in the post test level of attitude between the husband and wife at the level of p<0.01.

SECTION E: CORRELATION BETWEEN MEAN IMPROVED KNOWLEDGE SCORE WITH ATTITUDE SCORE OF COUPLES REGARDING INFERTILITY.

n = 30

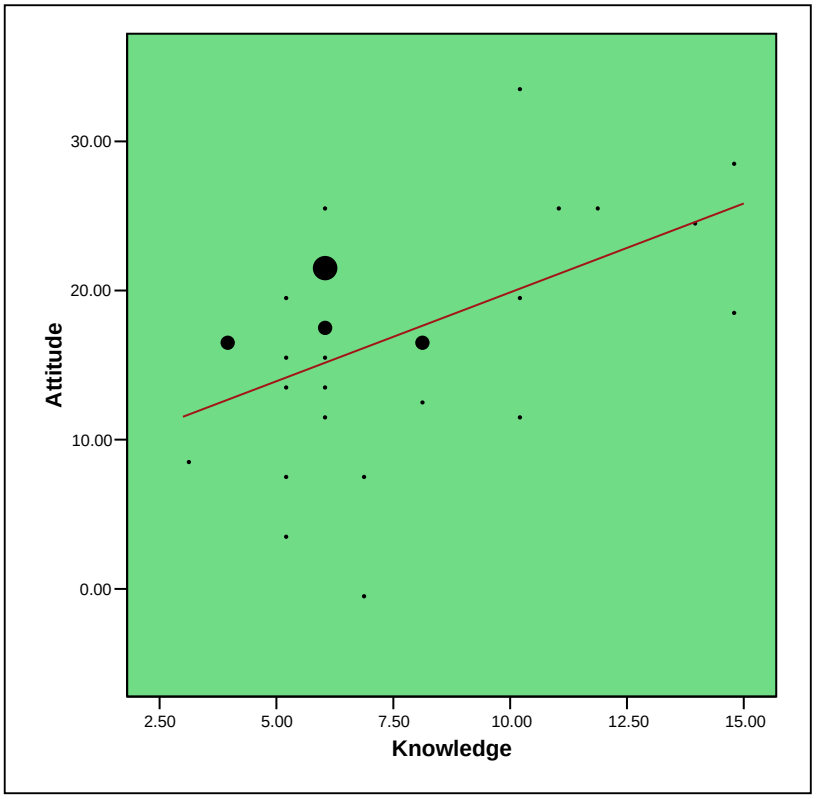

Fig 4: Correlation between mean improved knowledge score with attitude score of husband regarding infertility.

Figure 4 shows the correlation between post test knowledge score with attitude score of husband regarding infertility.

While analyzing the level of knowledge of husband, the mean score was 7.50 with standard deviation of 3.23. In the level of attitude the mean score was 16.90 with standard deviation of 7.59. The calculated ‘r’ value was 0.47 at $p<0.02$, which showed that there was moderate positive correlation indicating an increase in the level of knowledge with attitude.

n = 30

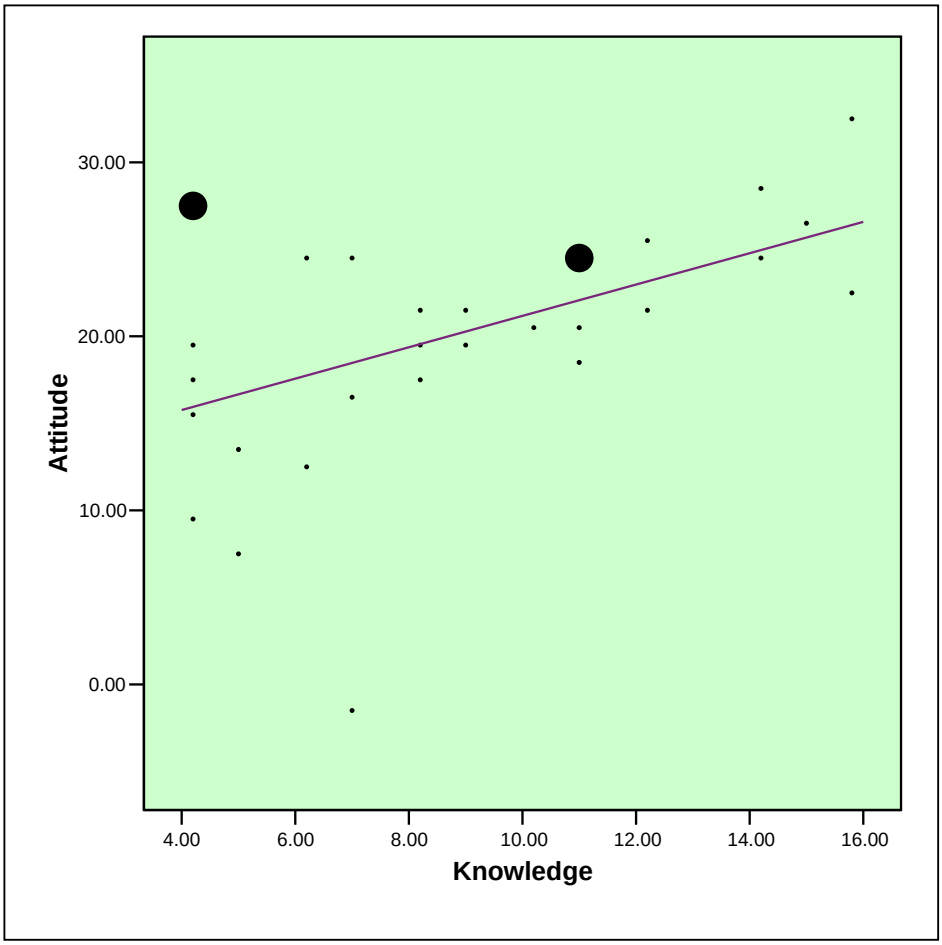

Fig.5: Correlation between mean improved knowledge score with attitude score of wife regarding infertility.

Figure 5 shows the correlation between post test knowledge score with attitude score of wife regarding infertility.

While analyzing the level of knowledge of wife, the mean score was 8.73 with standard deviation of 3.86. In the level of attitude the mean score was 20.03 with the standard deviation of 6.93. The calculated 'r' value was 0.57 at $p<0.01$, which showed that there was positive correlation indicating an increase in the level of knowledge with attitude.

SECTION F: ASSOCIATION OF MEAN IMPROVED KNOWLEDGE AND ATTITUDE SCORE OF COUPLES WITH SELECTED DEMOGRAPHIC VARIABLES.

Table 9 : Association of mean improved knowledge score of wives with selected demographic variable namely education.

n = 30

Demographic Variables	Pretest		Post Test		Mean Difference		ANOVA 'F' test
	Mean	S.D	Mean	S.D	Mean	S.D	
Education							F = 5.926 S**
Non literate	8.75	0.96	21.75	3.30	13.00	3.83	
Primary school	12.73	2.24	22.91	4.23	10.18	3.60	
High school	12.07	2.43	18.78	2.08	6.71	2.52	
Higher secondary	-	-	-	-	-	-	
Graduate	23.00	-	27.00	-	4.00	-	

**p<0.01, S – Significant

Table 9 shows the association of mean improved knowledge score of wives with selected demographic variable using 'F' test.

With regard to the association of mean improved knowledge score among wives with selected demographic variables showed that there was moderate statistical significant association with education at p<0.01 and no statistical significant association was found with other demographic variables.

With regard to the association of mean improved knowledge score among husbands with selected demographic variables showed that there was no statistical significant association was found with age, religion, occupation, number of working hours, family monthly income, food habits, personal habits, body mass index, duration of married life, family history of infertility and co-morbidity.

Table 10: Association of mean improved attitude score of husbands with selected demographic variable namely age.

n = 30

Demographic Variables	Pretest		Post Test		M.Diff		ANOVA
	Mean	S.D	Mean	S.D	Mean	S.D	'F' test
Age in years							
<25	42.00	2.83	51.50	10.61	9.50	7.78	
26 – 32	43.23	7.26	57.69	2.81	14.46	6.99	F = 2.994
33 – 39	38.09	3.62	56.54	3.14	18.45	5.80	S*
40 – 46	38.25	10.24	62.50	6.35	24.25	9.29	
>47	-	-	-	-	-	-	

*p<0.05, S – Significant

Table 10 shows the association of mean improved attitude score of husbands with selected demographic variable using 'F' test.

With regard to the association of mean improved attitude score of husbands with selected demographic variables showed that there was low statistical significant association with age at p<0.05 and no statistical significant association was found with religion, education, occupation, number of working hours, family monthly income, food habits, personal habits, duration of married life, family history of infertility and co-morbidity.

With regard to the association of mean improved attitude score of wives with selected demographic variables showed that there was no statistical significant association with age, religion, education, occupation, number of working hours, food habits, body mass index, age at menarche, nature of menstrual cycle, duration of married life, family history of infertility and co-morbidity.

CHAPTER – V

DISCUSSION

The study was conducted to evaluate the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples.

The discussion is based on the objectives, the review of literature and null hypotheses specified in this study.

The first objective was to assess the pre and post test level of knowledge and attitude of couples regarding infertility.

In assessing the pretest level of knowledge, majority 24(80%) of husbands and wives had inadequate knowledge, 6(20%) of husbands and 5(16.67%) of wives had moderately adequate knowledge and none of the husbands and 1(3.33%) of wives had adequate knowledge regarding infertility.

The analysis on pretest level of attitude among couples revealed that 13(43.33%) of husbands and 15(50%) of wives had unfavourable attitude, 17(56.67%) of husbands and 14(46.67%) of wives had moderately favourable attitude and none of the husbands and 1(3.33%) of wives had favourable attitude regarding infertility.

This finding was supported by a cross sectional study conducted by **Sumera Ali.et al. (2011)**[56] on knowledge, perceptions and myths regarding infertility among the patients at two tertiary care hospitals, Pakistan. A total of 447 adults were included in this study. The study results revealed that 25% of the subjects identified that infertility is pathological and 78% remain unfamiliar and unacceptable to IVF.

This in turn highlights the importance of education program among couples to improve their knowledge and attitude towards infertility.

The analysis on post test level of knowledge among couples revealed that 4(13.33%) of husbands and 1(3.33%) of wives had inadequate knowledge, 17(56.67%) of husbands and 18(60%) of wives had moderately adequate knowledge and 9(30%) of husbands and 11(36.67%) of wives had adequate knowledge regarding infertility.

The analysis on post test level of attitude among couples showed that 8(26.67%) of husbands and 16(53.33%) of wives had favorable attitude, 22(73.33%) of husbands and 14(46.67%) of wives had moderately favorable attitude and none of them had unfavorable attitude regarding infertility.

The findings showed that the information obtained from health care workers and through mass media has greater influence on the knowledge and attitude of infertile couples which showed a drastic improvement in the level of knowledge and change in attitude regarding infertility. On the other hand the number of questions framed on lifestyle modification component is given greater concern as it develop a good practice to achieve fertility.

The second objective was to compare the pre and post test level of knowledge and attitude of couples regarding infertility.

The analysis on comparison of pre and post test level of knowledge of husband revealed that the pre-test mean value was 11.80 with standard deviation 2.77. The post test mean value was 19.30 with standard deviation 3.97. The calculated ‘t’ value was 12.698, which was greater than the table value and this indicated that there was statistically high significant difference at $P < 0.001$ level.

When comparing the pre and post test level of knowledge of wife, the pretest mean value was 12.23 with standard deviation 3.20. The post test mean

value was 20.97 with standard deviation 3.78. The calculated 't' value was 12.396, which was greater than the table value and this indicated that there was statistically high significant difference at $P < 0.001$ level. This indicates that the multimedia educational package is highly effective.

The present study was consistent with the research conducted by **Maria.V.D, et al. (2011)[46]** on effectiveness of planned teaching programme for improving the knowledge of couples on reproductive health and sexual awareness among 50 couples who have registered their names at family life service center. The results of the study found that the pre-test mean value for husband was 11.84 and wife was 13.68. The post test mean value for husband was 30.46 with a 't' value of 30.86 and the post test mean value for wife was 33.18 with a 't' value of 37.96. The study concluded that the teaching programme has been very effective in changing the knowledge of the couples on various issues related to reproductive health and fertility.

Hence the null hypotheses (NH_1) stated earlier that there is no significant difference between pre and post test level of knowledge regarding infertility among couples at the level of $p<0.05$ was rejected.

The analysis on comparison of pre and post test level of attitude of husband revealed that the pre-test mean value was 40.60 with standard deviation 6.62. The post test mean value was 57.50 with standard deviation 4.58. The calculated 't' value was12.188, which was greater than the table value and this indicated that there was statistically high significant difference at $P < 0.001$ level.

When comparing the pre and post test level of attitude of wife, the pre-test mean value was 40.87 with standard deviation 7.29. The post test mean value was 60.90 with standard deviation 4.06. The calculated 't' value was 15.821, which was greater than the table value and this indicated that there was statistically high

significant difference at P<0.001 level. This indicates that the multimedia educational package is highly effective.

The finding was supported by the descriptive cross sectional study conducted by **Mashid Aryanpur, et al. (2010)[47]** to assess the effectiveness of educational material package among primary infertile couples with smoking in Avicenna Infertility clinic. The results of the study found that the mean knowledge level was 0.57± 0.79 and mean attitude score was 18.50 ± 2.95. 41(63%) husbands quitted smoking unrelated to cessation factors. Hence the educational package has been very effective in changing the knowledge and attitude of the couples regarding infertility.

Hence the null hypotheses (NH_2) stated earlier that there is no significant difference between pre and post test level of attitude regarding infertility among couples at the level of p<0.05 was rejected.

The third objective was to compare the pre and post test level of knowledge and attitude between husband and wife regarding infertility.

The analysis on comparison of pretest level of knowledge between husband and wife revealed that, the pre-test mean value of husband was 11.80 with standard deviation of 2.77 and the mean value of wife was 12.23 with standard deviation of 3.20. The calculated 't' value for knowledge was -0.560, which was less than the table value and this indicated that there was no significant difference in the knowledge between the husband and wife.

When comparing the post test level of knowledge between husband and wife, the post-test mean value of husband was 19.30 with standard deviation of 3.97 and the mean score of wife was 20.97 with standard deviation of 3.78. The mean difference was 1.67 and the calculated 't' value for knowledge was -1.665, which was less than the table value and this indicated that there was no significant difference in the post test level of knowledge between husband and wife.

When comparing the pretest level of attitude between husband and wife, the pre-test mean value of husband was 40.60 with standard deviation of 6.62 and the mean value of wife was 40.87 with standard deviation of 7.29. The mean difference was 0.27 and the calculated 't' value for attitude was -0.148, which was less than the table value and this indicated that there was no significant difference in the level of attitude between husband and wife.

When comparing the post test level of attitude between husband and wife, the post-test mean value of husband was 57.50 with standard deviation of 4.58 and the mean value of wife was 60.90 with standard deviation of 4.06. The mean difference was 3.4 and the calculated 't' value for attitude was -3.04, which was greater than the table value and this indicated that there was a significant difference in the post test level of attitude between the husband and wife at the level of $p<0.01$.

Hence the null hypotheses (NH_3) stated earlier that there is no significant difference between pre and post test level of knowledge and attitude regarding infertility between husband and wife at the level of $p<0.05$ was accepted for the post test attitude of husbands and rejected for the other values.

The fourth objective was to correlate the overall mean difference in the knowledge score with attitude score of couples regarding infertility.

While analyzing the level of knowledge of husband, the mean score was 7.50 with standard deviation of 3.23. In the level of attitude the mean score was 16.90 with standard deviation of 7.59. The calculated 'r' value was 0.47, at $p<0.02$ which showed that there was positive correlation indicating an increase in the level of knowledge with attitude.

While analyzing the level of knowledge of wife, the mean score was 8.73 with standard deviation of 3.86. In the level of attitude the mean score was 20.03

with the standard deviation of 6.93. The calculated ‘r’ value was 0.57 at $p<0.01$, which showed that there was positive correlation indicating an increase in the level of knowledge with attitude.

Hence the null hypotheses (NH_4) stated earlier that there is no significant relationship between the mean difference in the knowledge score with attitude score regarding infertility among couples at the level of $p<0.05$ was rejected.

The fifth objective was to associate the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables.

The analysis regarding the association of mean improvement of knowledge score among husbands with selected demographic variables showed that there was no statistical significant association with age, religion, education, occupation, number of working hours, food habits, personal habits, body mass index, duration of married life, family history of infertility and co-morbidity and attitude score with selected demographic variables showed that there was low statistical significant association with age at $p<0.05$ respectively .

The analysis regarding the association of mean improvement of knowledge score among wives with selected demographic variables showed that there was moderate statistical significant association with education at $p<0.01$ and the attitude score with selected demographic variables showed that there was no statistical significant association was found with age, religion, education, occupation, number of working hours, food habits, body mass index, age at menarche, nature of menstrual cycle, duration of married life, family history of infertility and co-morbidity.

Hence the null hypotheses(NH5) stated earlier that there is no significant association between the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables at the level of $p<0.05$ was rejected for age of husband with attitude and education of wife with knowledge and was accepted for the other demographic variables.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS, RECOMMENDATIONS AND LIMITATION

This chapter presents the summary, conclusion, implications, recommendations and limitation of the study.

SUMMARY

Infertility is one of the major reproductive health problem among couples, which has a lot of physical, mental and social consequences. Though various modern treatment modalities are available, lack of fertility awareness and the knowledge about infertility and lifestyle modification have an impact over the problem of being childless. These fertility issues pertaining to infertile couples can be preventable by utilizing proper health services. Health systems and health care professionals should focus on the needs of infertile couples and should promote the treatment seeking behavior.

The research shows that the treatment seeking behavior of infertile couples are affected due to poor knowledge and unfavourable attitude towards fertility issues. The infertile couples should be supported by health care professionals and should be made aware of the services available in order to enhance fertility and to achieve the goal of parenthood.

The purpose of the study was to assess the effectiveness of multimedia educational package on knowledge and attitude regarding infertility among couples in a cost effective way.

The objectives of the study were

1. To assess the pre and post test level of knowledge and attitude of couples regarding infertility.

2. To compare the pre and post test level of knowledge and attitude of couples regarding infertility.
3. To compare the pre and post level of knowledge and attitude between husband and wife regarding infertility.
4. To correlate the overall mean difference in the knowledge score with attitude score of couples regarding infertility.
5. To associate the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables.

The study was based on the assumptions that

1. The couples may have some knowledge regarding primary infertility.
2. Providing multimedia educational package may enhance the knowledge of couples.
3. Enhanced knowledge may create a positive attitude towards infertility.

The null hypotheses formulated were

NH_1: There is no significant difference between the pre and post test level of knowledge regarding infertility among couples at the level of $p<0.05$.

NH_2: There is no significant difference between the pre and post test level of attitude regarding infertility among couples at the level of $p<0.05$.

NH_3: There is no significant difference between the pre and post test level of knowledge and attitude between the husband and wife at the level of $p<0.05$.

NH_4: There is no significant relationship between the mean difference in the knowledge score with attitude score of the couples regarding infertility at the level of $p<0.05$.

NH_5: There is no significant association between the mean improvement of knowledge and attitude score regarding infertility with selected demographic variables at the level of $p<0.05$.

The investigator have done an in depth review of literature which included both theoretical and empirical related studies and statistics which provided a strong foundation for the study, including the basis for the conceptual framework and

formation of the tool and to select the research methodology, namely one group pre test - post test within subjects design which was found to be suitable for the study.

The conceptual framework for the study was based on HILDEGARD PEPLAU INTERPERSONAL RELATIONSHIP THEORY, which provided a comprehensive framework for evaluation of Multimedia Educational Package.

The content validity of the data collection tool and Multimedia Educational Package were obtained from 2 Medical experts and 6 nursing experts in the field of Obstetrics and Gynaecology.

The reliability of the tool was determined by inter-rater method and the feasibility of the study was analyzed by conducting a pilot study at Keezhkondaiyar Village, Thiruvallur District and the study finding determined the high reliability of the Multimedia Educational Package.

The main study was conducted at selected villages of Thiruvallur District namely, Kanniyamman Nagar, Veerapuram, Arakkampakkam, Bangarapettai, Kadhavur and Melpakkam. Purposive sampling technique was used and the sample size for the study was 30 couples who fulfilled the sample selection criteria and ethical aspects were maintained throughout the study.

Refined tools were used for data collection. Data collected were analyzed and interpreted based on the objectives and null hypothesis using descriptive and inferential statistics. The findings revealed that there was a significant difference in the level of knowledge and attitude regarding infertility after the administration of Multimedia Educational Package.

The major findings of the study revealed that

The overall mean improvement level of knowledge of couples showed a 't' value of 12.698 for husbands and 12.396 for wives which was significant at $p<0.001$ level. The findings revealed that there was statistically high significant difference in the level of knowledge regarding infertility between the pre and post test scores among husband and wife.

The overall mean improvement level of attitude of couples showed a 't' value of 12.188 for husbands and 15.821 for wives which was significant at $p<0.001$ level. The findings revealed that there was statistically high significant difference in the level of attitude regarding infertility between the pre and post test scores among husband and wife.

The analysis also revealed that there was a significant association between the mean improvement of attitude score with age of husband at $p<0.05$ and the mean improvement of knowledge score with education of wife at $p<0.01$. There was no significant association between post test level of knowledge and attitude of both husband and wife with other demographic variables.

CONCLUSION

The present study assessed the effectiveness of Multimedia Educational Package on knowledge and attitude regarding infertility among couples. The study findings revealed that there was a significant difference in the level of knowledge and attitude of couples and concluded that Multimedia Educational Package on infertility was an effective method to improve the knowledge and attitude of infertile couples.

IMPLICATIONS

The investigator has drawn the following implications from the study, which is of vital concern in the field of Nursing practice, Nursing Administration, Nursing Education and Nursing Research.

Nursing Practice

The midwives have a vital role to work with infertile couples to build their knowledge, understanding and informed decision-making in relation to their fertility choices.

This can be facilitated by motivating the nurse midwives to:

- Utilize the findings of the study to plan regular and periodic health education sessions for infertile couples in hospitals and community health centres regarding infertility.
- Implement mass educational programme on fertility awareness using multimedia educational package.
- Possess professional responsibilities in educating infertility services that encompass teaching, counseling and clinical roles.

Nursing Education

- Post graduate diploma course in “infertility management” should be included as a clinical specialization for nurses.
- Nursing curriculum should include the reproductive and sexual awareness topics so that the student nurses are trained to educate the public using multimedia educational package.
- Conduct seminars, workshops and conferences for students regarding the recent advancement in infertility management in order to provide up to date information to enhance their knowledge.
- Provide adequate clinical exposure for the nursing students to acquire clear and correct information on various issues of infertility services.
- Encourage the nursing students for effective utilization of research based practice.

Nursing Administration

The nurse administrator within the community or society should:

- Make the staff to carry out periodical reproductive surveillance and present an updated epidemiological picture of infertile couples in the community.

- Conduct CNE based on issues related to infertility and its management.
- Incorporate the findings of the study to plan training programme for health personnel to promote infertility services.
- Collaborate with governing bodies to create policies and mobilize resources, create coalition with non governmental organizations in order to create awareness regarding infertility among infertile couples.
- Attend training programmes on preparation of programmed learning modules, study guides, independent learning activities for infertile couples.
- Organize infertility clinics in Hospitals and Community Health Centers every week.

Nursing Research

As a nurse researcher

- Disseminate the findings of the study through conferences, seminars and by publishing in journals and websites.
- Promote more research in prevalence of primary and secondary infertility.
- Utilize evidence and research findings in planning, implementing and evaluating infertility services.

RECOMMENDATIONS

1. From the findings of the study the researcher identified that there was an influence of education in the post test level of knowledge of wives. Hence the investigator recommends compulsory education in the rural areas to improve their health status.
2. The multimedia educational package can be implemented as a regular programme for infertile couples in Omayal Achi Community Health Center and in various primary health centers to improve their level of knowledge and to create favourable attitude regarding infertility.
3. The student nurses can use this multimedia educational package for health education of infertile couples in various settings.

4. Multimedia educational package can be utilized in all infertility clinics as an instructional material.
5. Educational package regarding fertility awareness can be implemented in all colleges and maternity hospitals.

The study recommends the following for future research:

1. Similar study can be replicated on a larger sample to increase the validity and generalizability of findings.
2. A comparative study regarding knowledge and attitude of infertile couples between urban and rural community can be conducted.
3. A qualitative approach can be done to explore the lived-in experience of couples with permanent childlessness
4. A prevalence study on infertility can be conducted in a larger setting.
5. A prospective study can be conducted to assess the treatment seeking behavior of couples after the training programme on infertility.

LIMITATIONS

1. Non availability of couples at the same time to conduct the study.
2. Studies on effectiveness of teaching programme on infertility were limited.
3. Identifying the couples with primary infertility was difficult.